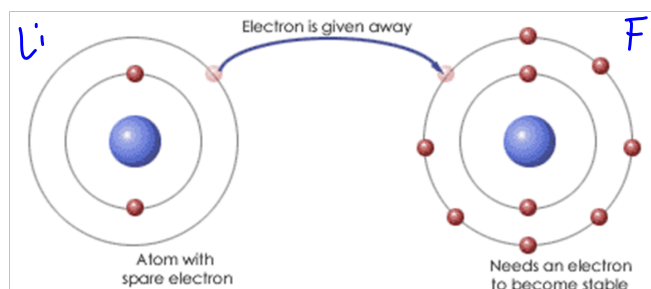


- Ionic Bonds:

- Formed when one atom gives away  $e^-$  and other atom takes  $e^-$


 $\text{Li}^+$ 
 $\text{F}^-$ 
 $\text{LiF}$ 

- Ionic bonds :

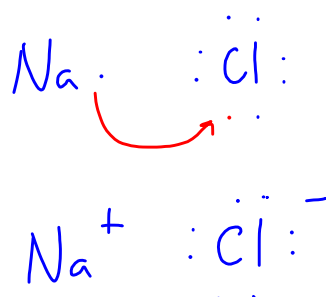
- Occur between a metal and a non-metal
- Occurs between two oppositely charged atoms

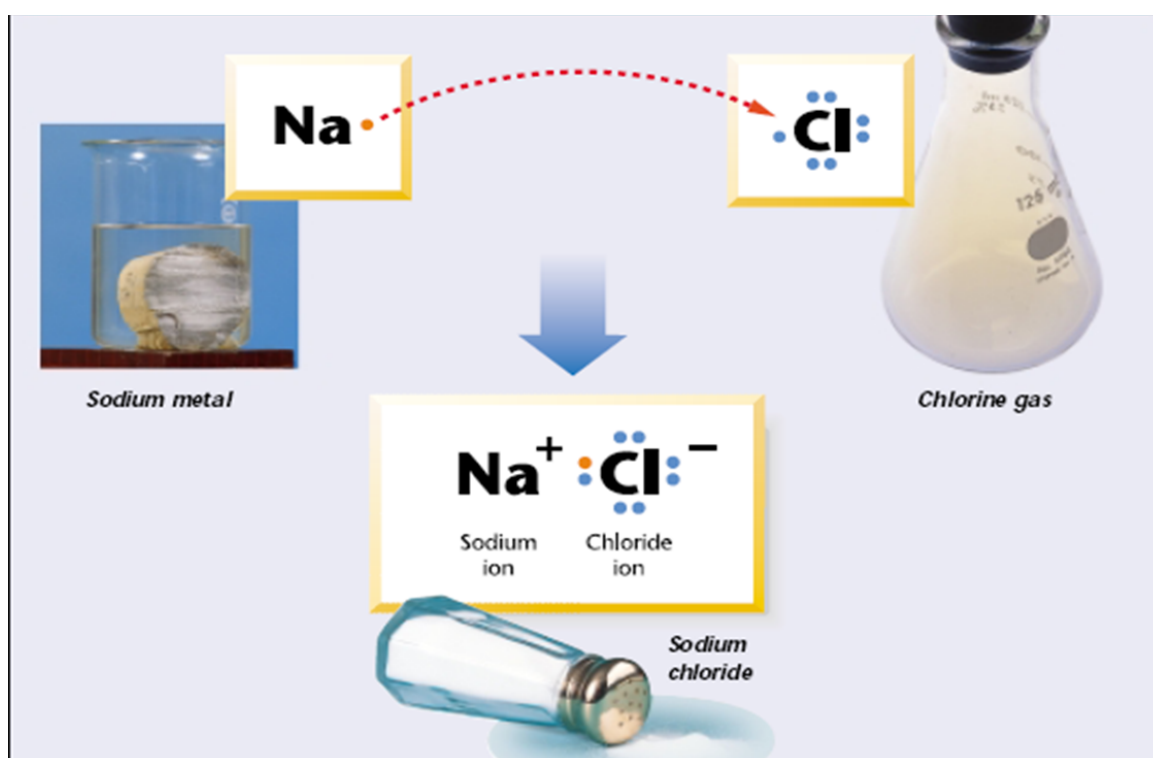
- Drawing Ionic Bonds:

- Use  $\text{NaCl}$  as example

1.  $\text{Na} \rightarrow \text{metal} \rightarrow +1$   
 $\text{Cl} \rightarrow \text{non-metal} \rightarrow -1$

2. Draw Lewis Dot Structure

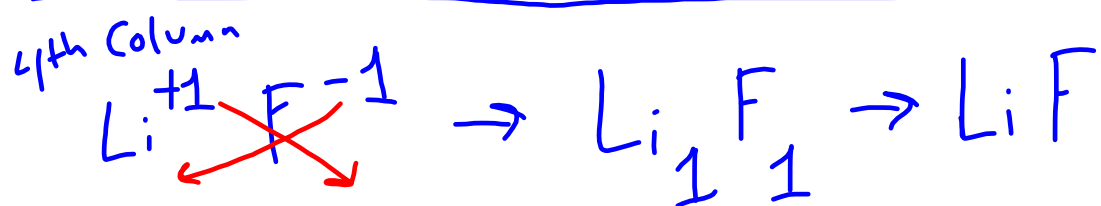




- Properties of Ionic Bonds:
  - Stronger bonds
  - Compounds formed have high melting points
  - Conduct electricity in a solution (mixed with water) or in liquid state
  - Generally dissolve in water
  - Generally crystalline at room temperature

# Oxidation: More Practice Sheet

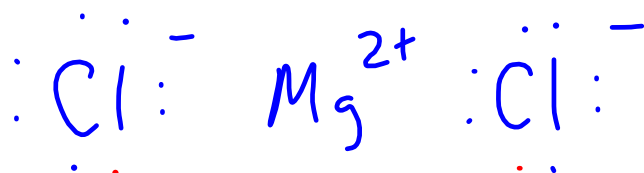
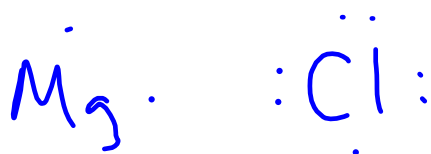
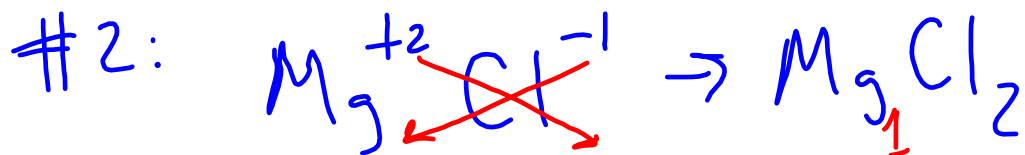
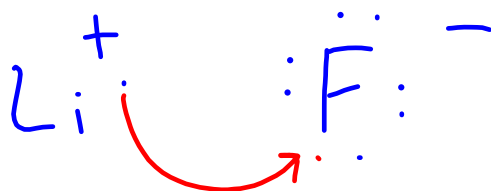
4th Column



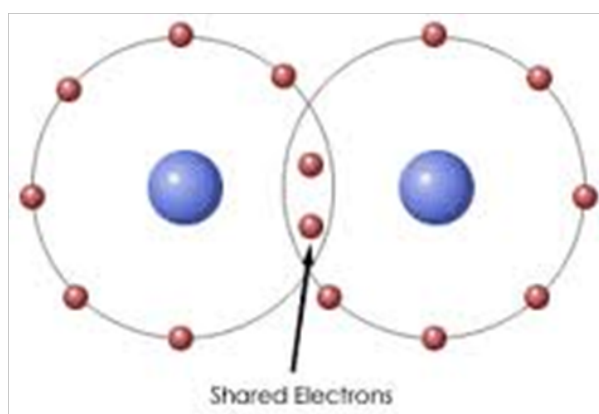
5th/6th columns



7th Column



- Covalent Bonds:
  - Occurs between two non-metals
  - Formed when atoms share electrons
  - Can be between two different elements or two atoms of the same element
  - Two of the same element is called a molecular compound  
AKA → molecule



(valence  
energy level)

F  $\uparrow$  F (or any halogen)

"double count" shared electrons  
to get atoms to full valence energy level

- Drawing Covalent Bonds:

- Example: HCl

1. Draw Lewis Dot Structure
2. Draw electrons being shared
3. Draw each covalent bond as a line between the atoms

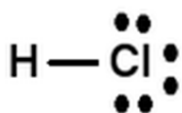
1.



2.



3.



↑  
line implies  $2e^-$

- Properties of Covalent Bonds:
  - Weaker bonds
  - Low melting and boiling points
  - Do NOT conduct electricity in solution
  - Generally don't dissolve in water
  - Generally gases and liquids at room temperature



• Practice Covalent Bonds:

-  $H_2O$

